

User's Manual



MCR 1000 Magnetic Stripe and Bar Code Slot Reader

Keyboard Wedge, RS232, USB Interface

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Section 1

Introduction and Getting Started

Product Overview

The MCR-1000 is a slot reader that is capable of reading either a bar code or (if equipped) magnetic stripes on cards that are passed through the slot.

The MCR-1000 is available with several different interface configurations:

- Keyboard Wedge Interface
- RS232 Interface
- USB Interface

Installation and Getting Starting

Determine which type of interface you have and follow the steps indicated under the appropriate section

A) RS232 Interface

The standard slot reader is terminated with a DB25 female connector. In many instances, an external power supply will be needed to provide power for the slot reader unless the RS232 port on the receiving device has +5 V DC on pin #25.

1. Plug the slot reader into an RS232 serial port (such as COM1) of the host PC. If external power is required, utilize the patch cable available from Opticon.
2. Turn on the PC. Make sure the serial communications settings of the PC match those of the bar code reader. The default communications settings are: 9600 baud, 8 bits, 1 stop bit, no parity, no handshaking.
3. Connect the power supply into an electrical outlet (110V AC) and plug it into the jack on the patch cable.
4. Be sure the PC is in a program (such as Hyperterminal or Listen 32) that will accept data input from the serial port.

B) Keyboard Wedge interface

A "Y" cable is provided for installation. Connect the DB9 connector to the slot reader. Connect one leg of cable into the keyboard port of your PC. (Be sure not to plug it into the mouse port.) Connect the remaining leg to your keyboard.

C) USB Interface

1. Plug the slot reader into a USB port on your PC. There is no needed to turn off power to the PC during installation. PC must be running Windows 98 or higher or Mac OS8.6 or higher.
2. Macintosh PC will automatically detect the slot reader and load the required drivers.
3. A Windows PC will recognize the presence of a new hardware device and prompt you through the installation. Windows 98, for example, will open the dialog box: "Add New Hardware Wizard" which will guide you through installation. Click **NEXT**
4. At the prompt "What do you want Windows to do?", select "Search for best driver" then click **NEXT**
5. At the prompt "Windows will search its driver database on your hard drive, click **NEXT**
6. At the prompt "Windows located a USB Human Interface Device", click **NEXT**
7. At the prompt indicating that Windows has installed a specific driver, click **FINISH**

Your slot reader is now ready to scan bar codes! Cut out the following bar code (or make a copy of it) and paste it onto a 3x5 card.

Be sure that there is about $\frac{1}{4}$ inch of white space below the bar code. And make sure there is at least $\frac{1}{2}$ inch of space on both the right and left sides of the bar code.



Try scanning the bar code. Insert the card so that it rests on the bottom of the slot, with the bar code facing the indicator light. Swipe the card quickly, taking care to ensure that it doesn't raise up off the bottom of the slot.

Section 2

Technical Specifications

Physical Specifications

Case Material	Plastic
Dimensions	4.9" x 1.9" x 1.6" (LxWxH) (125 x 47 x 40.5 mm)
Weight	4.6 oz (130 grams) w/o cable
Cable Length	5 Feet (1500 mm)

Bar Code Symbolologies Supported

- ♦ Codabar (NW-7)
- ♦ Code 39
- ♦ Code 93
- ♦ Code 128
- ♦ Industrial 2 of 5 Interleaved 2 of 5
- ♦ MSI / Plessey
- ♦ WPC (UPC / EAN / JAN)
- ♦ IATA

Magnetic Stripe Support

Type I	IATA, ABA, THRIFT
Type II	NTT
Standard	JIS x 6301 –Type I/II
Scan Speed	3.9 to 59 in/sec (100 - 1500mm/sec)
Scan Direction	Bi -Directional

Optical Bar Code Specifications

Scan Speed	6 to 79 in/sec (150 - 940mm/sec)
Scan Direction	Bi -Directional
Light source	660 ±10nm visible laser diode 940 ±10nm infrared laser diode

Electrical

Voltage	5 V DC ±10%
Current	
Operating	100 mA max
Standby	60 mA max
Surge	3 A max

Environmental

Temperature	
Operating	+32 to +104 F (0 to +40 C)
Storage	+14 to +140 F (-10 to +60 C)
Humidity	
Operating	20 to 80%
Storage	20 to 90%
ESD	10 KV

Section 3

Programming the Slot Reader

The slot reader is ready to use. It has been preprogrammed at the factory with the most common settings. These factory default settings are ideal for most situations.

If you do wish to change certain parameters, this section of the manual contains the information that allows you to easily change certain programmable parameters of the slot.

There are two different ways to change parameters in the slot reader. The method you choose may depend on the type of interface in your reader.

- A. All interface types (USB, RS232 and Wedge) can be changed or modified by swiping Programming Command Bar Codes through the slot reader in a particular sequence.
- B. For those slot readers with Wedge or RS232 interface, the keyboard can be used to enter Programming Commands that are transmitted to the slot reader to change parameters.

A. Using Bar Codes To Program

Programming using bar codes is easy is an easy way of changing parameters. There is a specific bar code associated with each parameter. Reading that bar code changes the settings within the slot reader.

To select menu options:

- 1) Scan the bar code for **"Start/End Program Menu"**. The slot reader will beep continuously to indicate that it is ready to be programmed.
- 2) Select the bar code associated with the parameter selection from menu. Scan that bar code by swiping it through the slot (a beep and a green light indicate that the parameter has been scanned).
- 3) Scan the bar code for **"Start/End Program Menu"**. This completes the operation and the new parameter is saved in memory.

B. Using the Keyboard to Program

To program an RS-232 slot reader from the keyboard, open a Terminal Program such as Hyperterminal. Initially, set communication parameters to default: 9600 Baud, no parity, 8 data bits, 1 stop bit, no handshaking.

The command format is as follows: <ESC><command><CR>

To program a Wedge slot reader from the keyboard, open a Text Program such as Notepad or a similar text editing or word processing program, such as Word.

- 1) Slide the **"ZK"** bar code through the slot reader to enable keyboard programming. The reader will beep to indicate it's ready for keyboard commands.



- 2) Set the **CAPS LOCK**.
- 3) Select the 2 characters representing the desired function from the left hand column of the programming menu. Type the 2 characters and **ENTER** for each command. The scanner will beep to indicate the command was accepted.
- 4) When all commands have been entered, type **ZK** and **ENTER** to finish programming.

NOTE: If any mistakes are made in programming, scanning or entering the U1 command will return the slot reader to Default settings.

Most of the parameters, except those related to RS-232 communication (e.g. baud rate, data bits) can be changed by sending a command to the slot reader from the host. The parameters chosen this way are only effective while the power is supplied to the slot reader, and will be lost as soon as the power is switched off. To make the new setting permanent, the save settings command "Z2" can be sent to the slot reader after all changes have been made.

Technical Support

Opticon's experienced technical staff is available during regular business hours to answer questions and assist you in every way possible in support of our products, at (800) 636-0090.

When calling Opticon Technical Support, please have the unit model number and several bar code labels readily at hand. The model number is located near the connector end of the cable.

Section 4

General Programming Commands

The following tables contain a menu of various parameters or functions that can be changed or modified. The description of the function is contained in the center column. The Programming Command bar code is in the right hand column and the Computer Keyboard Command is in the left hand column.

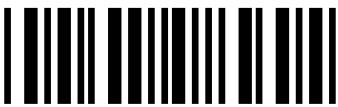



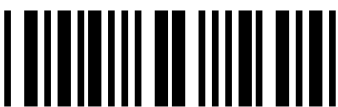



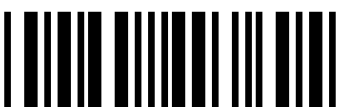
To utilize the Programming Command, some users find it easier to cut out the programming bar code (or make a copy) and paste it to a 3x5 card. Be sure the bar code itself is only ¼ inch from the bottom of the card. Swipe these programming bar code(s) through the slot reader in the correct sequence to change or modify the desired parameters.

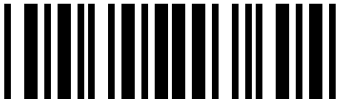


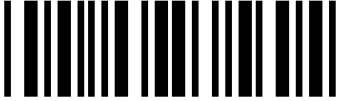



1. Scan the bar code for **"Start/End Program Menu"**. The slot reader will beep continuously to indicate that it is ready to be programmed.
2. Select the bar code associated with the parameter selection from the menu. Scan that bar code by swiping it through the slot (a beep and a green light indicates that the parameter has been scanned).
3. Scan the bar code for **"Start/End Program Menu"**. This completes the operation and the new parameter(s) is saved in memory.




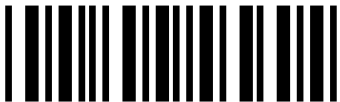




Factory Defaults

General Commands

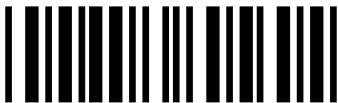








Computer Command	Function / Description	Bar Code Command	
ZK	Start Keyboard Programming (Wedge Only)		
Z7	Start / End Menu Programming		
U1	Defaults No Mag Tracks		
KU	American Keyboard		
7B	Mag Track 1 Only		
7I	Mag Tracks 1 & 2		
P1	USB Power 100 mA (USB Only)		
WC	Caps Default ON		

XC	Caps Default OFF		
D0	Remove Code39 Start / Stop (* / *)		
D1	Insert Code39 Start / Stop (* / *)		
XT	Do not transmit a TAB after decode		
XR	Do not transmit a Carriage Return after decode		
Z7	Start / End Menu Programming		

Code Enable


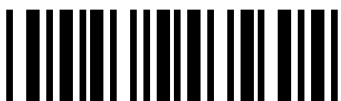




B6	Enable Code 128		
4N	Disable Code 128		
B4	Enable I –2 of 5		
4J	Disable I –2 of 5		

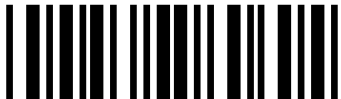
Prefixes & Suffixes

M4	Set Code 39 Prefix		
O4	Set Code 39 Suffix		
N1	Set UPC-A Prefix		
N6	Set UPC-A Suffix		
M9	Set Code 128 Prefix		
O9	Set Code 128 Suffix		
MA	Set Mag IATA Prefix		
OA	Set Mag IATA Suffix		
MB	Set Mag ABA Prefix		

OB	Set Mag ABA Suffix		
1Y	Clear All Prefixes		
1Z	Clear All Suffixes		


Control Characters











1A	STX		
1B	ETX		
1C	CR, ENTER		
1D	LF		
1E	ESC		
1F	TAB		

1H	BS		
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Direct Input Characters











The following Programming Commands for the Direct Input of Characters are only available for RS232 and Keyboard Wedge interface slot readers with software version DM05J13 and above, and for USB interface unit with software version DU01J05 and above











\$20	[SPACE]		
\$21	!		
\$22	"		
\$23	#		
\$24	\$		
\$25	%		
\$26	&		











\$27	,		
\$28	(	
\$29)		
\$2A	*		
\$2B	+		
\$2C	,		
\$2D	-		
\$2E	.		
\$2F	/		
\$30	0		

\$31	1		
\$32	2		
\$33	3		
\$34	4		
\$35	5		
\$36	6		
\$37	7		
\$38	8		
\$39	9		
\$3A	:		

\$3B	;		
\$3C	<		
\$3D	=		
\$3E	>		
\$3F	?		
\$40	@		
\$41	A (UPPER CASE)		
\$42	B		
\$43	C		
\$44	D		




\$45	E		
\$46	F		
\$47	G		
\$48	H		
\$49	I		
\$4A	J		
\$4B	K		
\$4C	L		
\$4D	M		
\$4E	N		

\$4F	O		
\$50	P		
\$51	Q		
\$52	R		
\$53	S		
\$54	T		
\$55	U		
\$56	V		
\$57	W		
\$58	X		

\$59	Y		
\$5A	Z		
\$5B	[	
\$5C	\		
\$5D]		
\$5E	^		
\$5F	—		
\$60	`		
\$7B	{		
\$7C			

\$7D	}		
\$7E	~		
\$7F	[DEL]		

Save or Display

Z2	Save Settings		
Z3	Display Settings, Software ver.		
Z4	Display Prefixes, Suffixes		



Factory Defaults

Changing Other Parameters

The preceding tables of programming commands represent only the most commonly changed parameters. Other parameters can be changed as well.

To learn more about changing these other parameters, please contact Opticon Technical Support:
1 – (800) 636 – 0090

Revision History

-01	Feb 2003	Initial Release
-02	April 2004	Added XT and XR Programming Commands